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(71) Applicant  
Alan Raven Edwards,  
Atheralls Farm,  
Fletching,  
Uckfield,  
Sussex TN22 3TD.  
(72) Inventor  
Alan Raven Edwards  
(74) Agents  
G. F. Redfern & Co.

(54) Improvements in or relating to walking sticks

(57) A device which can be used as a walking-stick or for crossing barbed wire fences, comprises an elongate body portion (3) at one end of which is fixed a hollow cross-piece (1) having an axial slot (1') extending its full length adjacent the end of the body portion (3), and a step member comprising two arms (4) for movement from a closed position in which they lie parallel to the axis of the body portion (3) to one in which they extend at right-angles to said axis and normal to the axial direction of the cross-piece (1). Preferably, the distance between the cross-piece (1) and the step member is variable. An extension (5) is slidable in or on the body portion (3) and is clampable thereto, the end of the extension preferably being provided with a spike and flange as in a conventional shooting-stick.

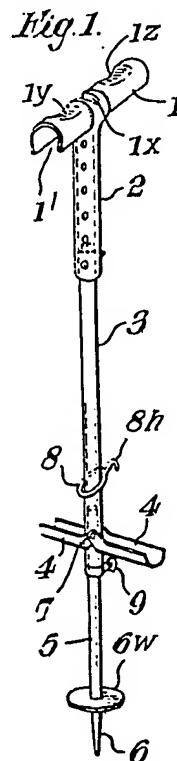


Fig. 4.

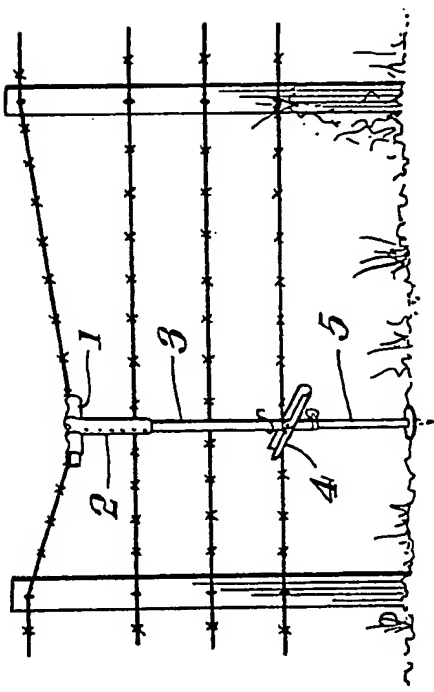


Fig. 5.

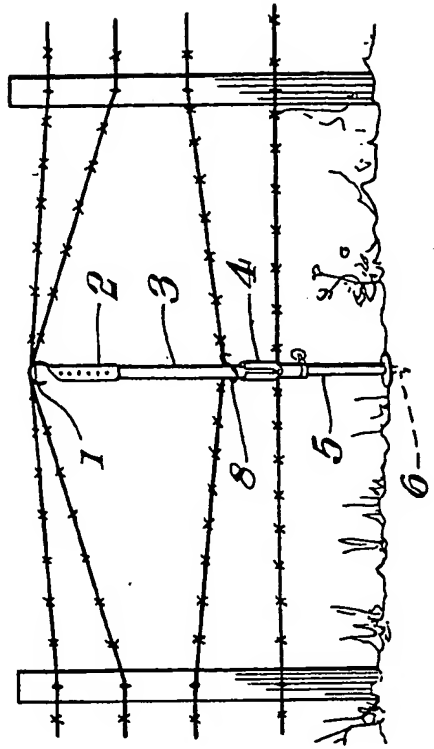


Fig. 3.

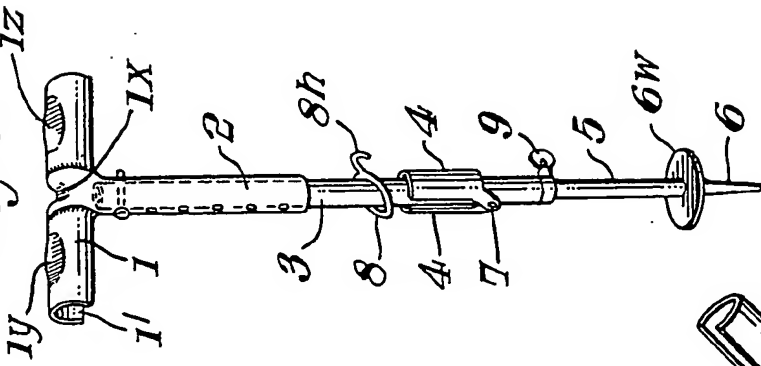


Fig. 2.

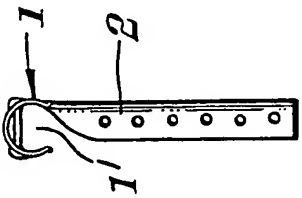


Fig. 6.

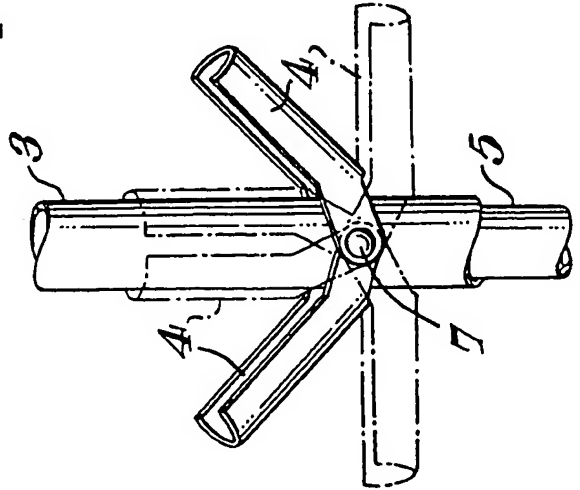
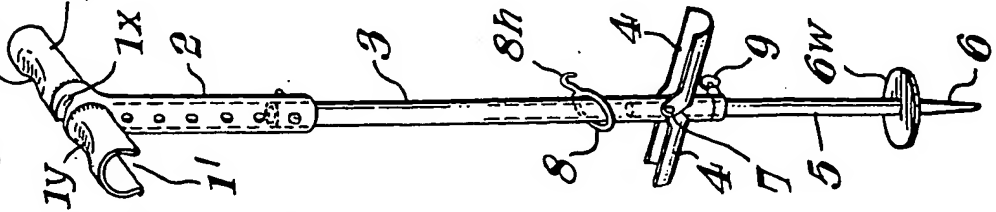
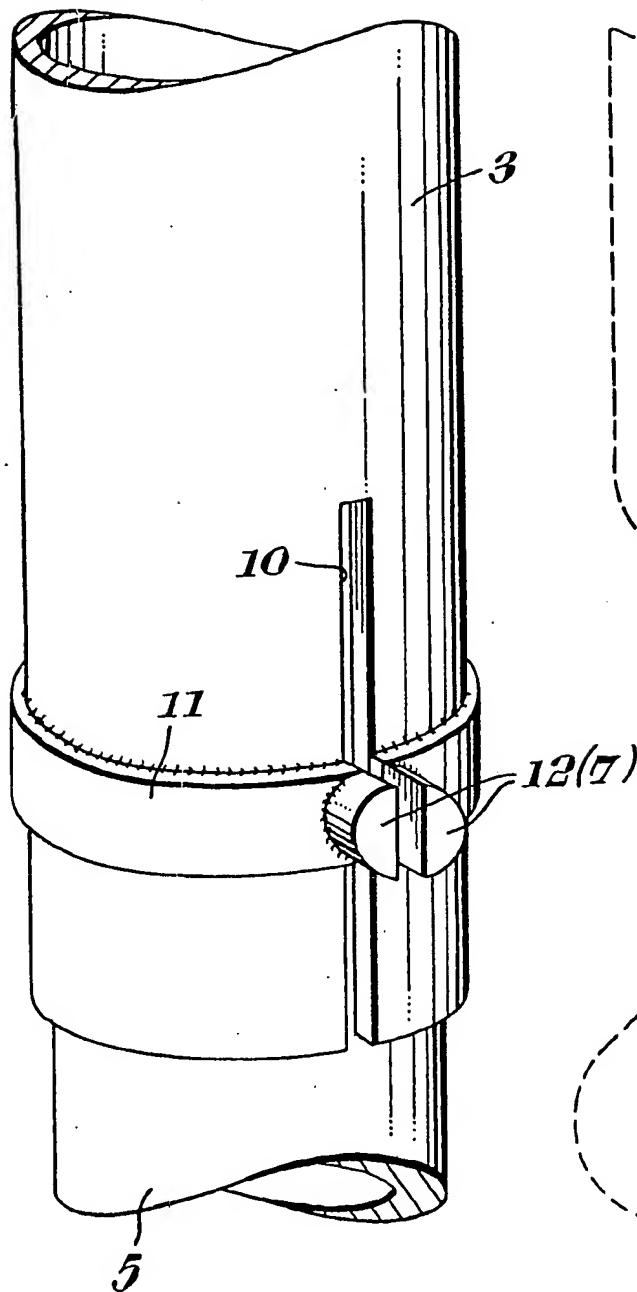
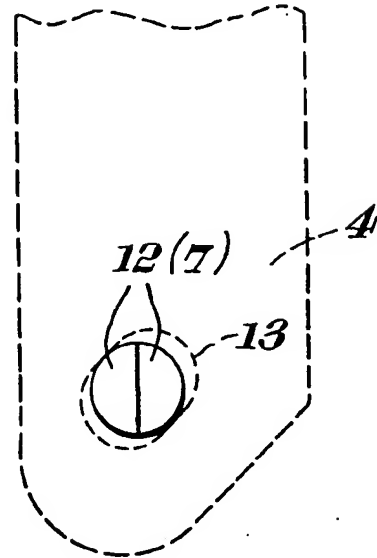
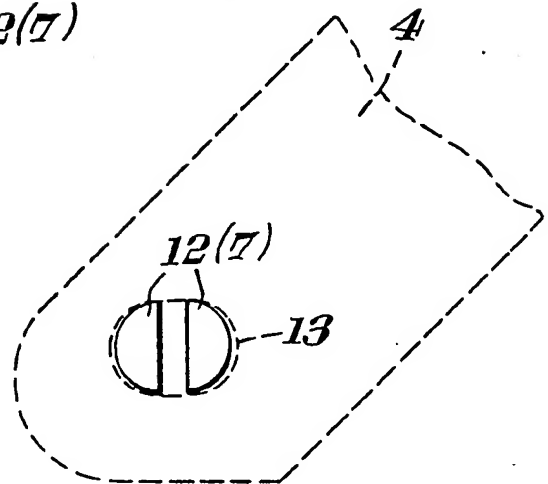


Fig. 1.



*Fig. 7.**Fig. 8.**Fig. 9.*

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Fig. 10.

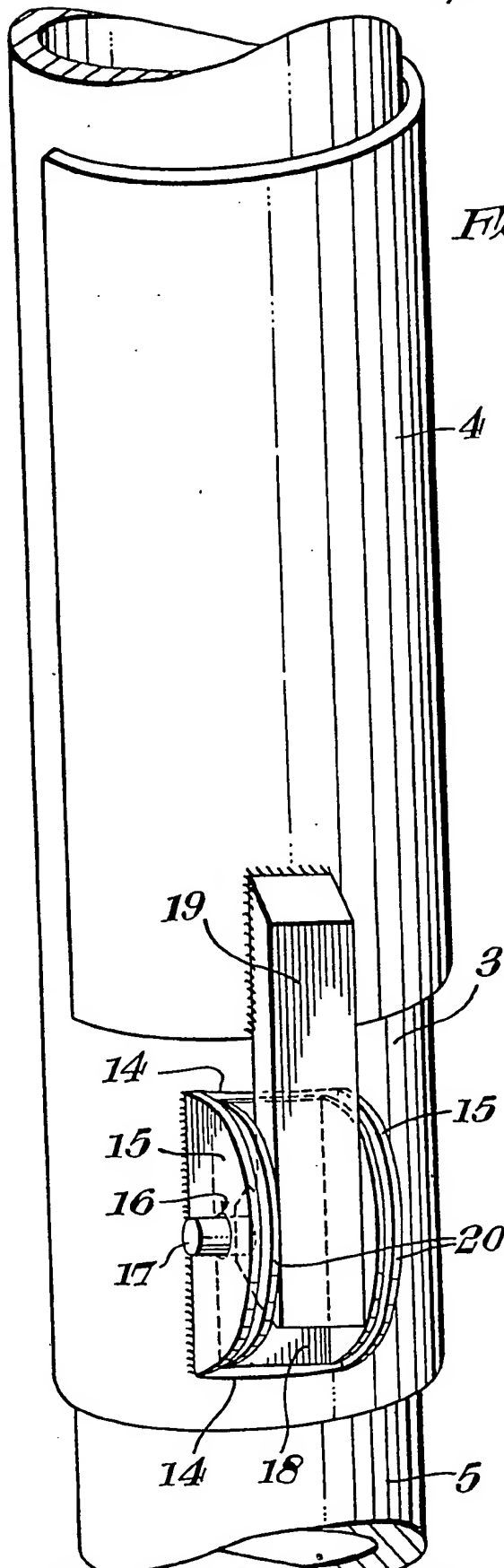


Fig. 11.

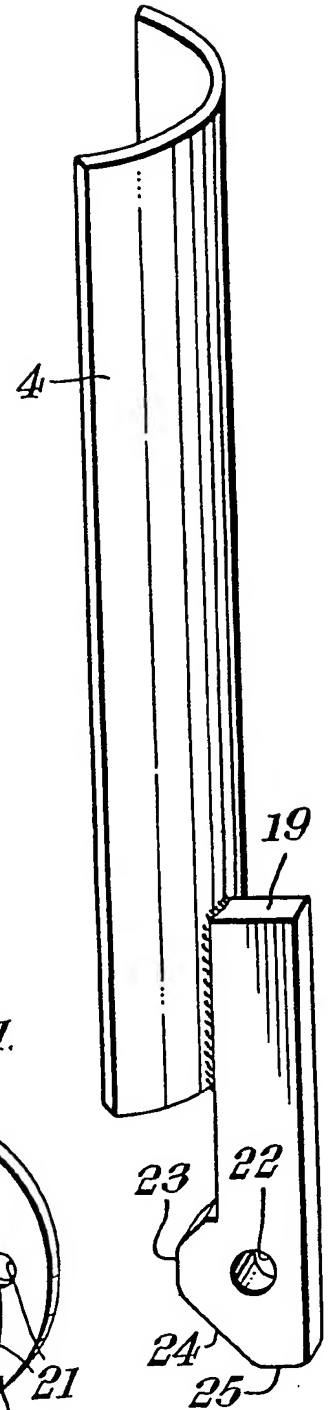
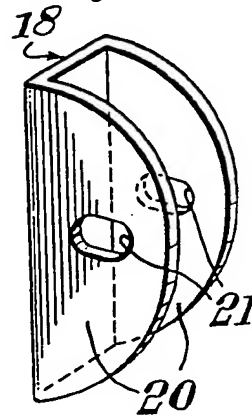


Fig. 12.

## SPECIFICATION

## Improvements in or relating to walking sticks

- 5 The present invention relates to walking sticks and more particularly to a combined walking stick and fence-crossing device which enables the user to surmount or negotiate barbed wire and similar fences.
- 10 The majority of boundary fences and fences between fields nowadays consist of from 2 to 8 strands of barbed wire or of wire mesh at a lower level with one or more strands of barbed wire above it. In order to surmount such a fence, it is normally necessary to place some protective material over the
- 15 top barbed strand in order to prevent the barbs from snagging or tearing clothing or skin, and then to place a foot on one of the lower strands of the fence in order to lift the body high enough to straddle the
- 20 fence with the other leg. This is a difficult proceeding which may be dangerous, particularly if the staple securing the lower strand should give way or if the lower strand should itself break or be too loose when the weight of the person negotiating the fence is placed upon it.
- It is an object of the present invention to provide a device which, while suitable for use as a walking stick, can be rapidly and simply converted into what may be described as a "portable stile" to enable the
- 30 user to negotiate a barbed wire or like fence. The device will therefore be particularly suitable for use by farmers, stockmen, shepherds and land surveyors; and also by those engaged in sporting or leisure pursuits, such as cross-country walking or rambling, or following hounds on foot, and in
- 35 general, by any person who is continually requiring to get over wire fences.
- According to the invention, there is provided a combined walking stick and fence-crossing device
- 40 comprising an elongate body portion, a hollow cross-piece mounted at one end of said body portion and having an axial slot extending the full length of the cross-piece and opening adjacent to the body portion; a step member mounted at a position on
- 45 said body portion intermediate the ends thereof and comprising a pair of arms movable between a position in which they lie parallel to the axis of the body portion and a position in which they are locked so as to extend from the body portion on either side
- 50 thereof in a direction substantially normal to the axial direction of said cross-piece. Preferably, means are provided for varying the distance between the cross-piece and the step member in the axial direction of the body portion.
- 55 In use, the cross-piece is hooked over the top strand of the barbed wire to act as a guard, the arms of the step member are moved into the extended position and the user climbs over the fence using the step arm on either side to receive his weight. The
- 60 distance between the cross-piece and the step member will previously have been adjusted to suit the particular leg length of the user, when provision is made for this. Otherwise a stick with the required distance will have been selected to suit the user. This
- 65 can conveniently be done by forming the cross-piece

as the cross arm of a T-shaped member, the stem of which is tubular and is adapted to slide over the end of the body portion and be clamped thereto at one of a plurality of positions.

- 70 Preferably, means are provided for adjusting the total length of the device in order to cope with fences of varying height. This is preferably done by providing the end of the body portion remote from the cross-piece with an extension in the form of a rod or
- 75 tube which is telescopically slidable over or within the body portion, and can be clamped thereto at any desired axial position. The lower end of this extension is preferably provided with a spike and surrounding flange as in conventional shooting-sticks
- 80 to prevent the device from penetrating too far into the soft ground.

The body portion and the extension will usually be of cylindrical cross-section, but may be of any other suitable cross-section, e.g. square or rectangular section, if desired.

- 85 If desired, means may also be provided on the body portion which may be used in conjunction with the cross-piece to hold apart two relatively loose adjacent strands of the barbed wire fence to provide
- 90 an opening which can be negotiated by the user. The means may consist in an oval-shaped metal ring to one end of which is welded or otherwise fixed a hook, the internal diameter of the narrowest part of the ring being such that it will slide freely over the
- 95 body portion when loose but will jam on the body portion when the hook is forced upwards by the pressure of a wire.

The cross-piece is preferably suitably shaped at its upper surface to serve as a seat so that the device can be used in the manner of a conventional shooting-stick.

Conveniently, the device is manufactured entirely of a suitable aluminium alloy in order to obtain adequate strength with lightness.

- 105 A preferred embodiment of the invention will now be further described with reference to the accompanying drawing in which:-

*Figure 1* is a schematic perspective view of a device according to the invention with the step member in the extended position and the position of the cross-piece set for a relatively tall person;

*Figure 2* is a schematic side view of the cross piece and mounting therefor of *Figure 1*;

*Figure 3* is a front view of the device of *Figure 1* with the step member in the folded position and the cross-piece set for a relatively short person;

*Figure 4* is a front view of a wire fence showing the device of *Figure 1* in use for crossing the fence;

*Figure 5* is a front view of a wire fence showing the device of *Figure 1* in use for widening and maintaining a gap between adjacent strands of wire;

*Figure 6* is a front view of the step member of the device of *Figure 1* with the arms in a partially open position;

*Figure 7* is a schematic perspective view of the lower end of the body portion of the device of *Figure 1* to illustrate an alternative method of clamping the leg therein;

*Figures 8 and 9* show part of one of the step arms in two alternative positions to illustrate the leg-

clamping method of Figure 7;

**Figure 10** is a perspective view of the lower end of the body portion of the device of Figure 1 to illustrate yet another method of clamping the leg therein;

5 **Figure 11** is a perspective view of a pressure plate for use in the arrangement of **Figure 10**; and

Figure 12 is a perspective view of one arm of the step member of the arrangement of Figure 10.

Referring to Figure 1, the device comprises a body portion 3 in the form of a tube made of a suitable aluminium alloy. At one end of the body 3 there is mounted a guard 1 in the form of a cross-piece of a T-shaped element, the stem of which is formed by a guard tube 2 which is welded or otherwise firmly fixed to the cross-piece and which is of such diameter that it will slide telescopically on the body portion 3. The guard tube 2 is some 8 to 12 inches (20.32 to 30.48 cm) in length and is drilled with six holes at 1 inch (2.54 cm) intervals. Each of these holes can be brought into register with a single hole in the body member and a peg passed through the two holes in register to prevent axial movement between the guard tube and body member. In this way, the guard 1 can be set at different positions with respect to the body member.

The guard 1 is generally tubular and may, for example, have a diameter of 1½ inches (3.175 cm). It has an axial slot 1' adjacent to the body 3, so that the guard has the cross-sectional shape of an inverted U, the slot being provided with rolled edges. As shown in Figures 1 and 3, the centre of the upper surface of the guard 1 is provided with an indentation 1x for use when the device is employed to force apart two adjacent wires, as will be explained below. The upper part of the guard 1 is also provided with slightly flatter areas at 1y and 1z to enable it to be more comfortably used as a seat when the device is used in the same way as a conventional shooting-stick.

At an intermediate point between its ends, the body portion 3 is provided with a step member in the form of two arms 4 each of which is pivoted to the body member at its inner end on pivots 7. Each arm 4 is some 6 inches (15.24 cm) long and is of tubular construction, the internal diameter of the arms being such that they will either fit slightly over the outside of the body portion 3 when in the folded position, or can be opened out into a position in a plane making an angle of  $90^\circ$  with the axis of the body portion 3 and extend in a vertical plane making an angle of  $90^\circ$  with the vertical plane passing through the axis of the guard 1. The inner ends of the arms 4 are so shaped, as shown in Figure 6, that when in the opened position, they abut against the body portion 3 so as to prevent further downward movement of the arms when the weight of the user is placed upon them. The variation of the position of the cross-piece 1 with regard to the body portion 3 referred to above enables the distance between the arms 4 and the guard 1 to be varied in accordance with the leg measurement of the user. The six holes provided in the guard tube 2 enable inside leg measurements of from 28 to 34 inches (71.12 to 86.36 cm) to be catered for.

At its lower end remote from the guard 1, the body portion 3 is provided with a leg 5 in the form of a metal rod or tube of such length and diameter that it is a sliding fit within the whole length of the body portion 3. At its end which does not slide within the body portion 3, the leg 5 is provided with a pointed foot 6 which is some 2 inches (5.08 cm) in length and which can be pushed into the ground, the extent of penetration of the foot into the ground being restricted by means of a flange 6w as in a conventional shooting-stick.

The leg 5 and the body portion 3 can be clamped together in any desired position by means of a threaded tightening stud 9. By varying the length of the leg 5 within the body portion 3, the total length of the device can be varied to cope with fences of varying heights.

In an alternative embodiment (one variation of which is illustrated in Figures 7 to 9), the tightening stud 9 is omitted, its function being performed by a pivot 7 of the arms 4 which is arranged to incorporate a locking mechanism whereby the leg 5 is fixedly locked within the body portion 3 in any desired position when the arms 4 of the step member are in either the folded position (i.e. parallel to the axis of the body portion 3) or in the fully open position (i.e. at 90° to the axis of the body portion 3), but the leg 5 is free to slide within the body portion 3 when the arms are in the half-folded position (i.e. in which they make an angle of 45° with the axis of the body portion). The particular mechanism employed may be one of several kinds, for example, a pair of rubber-tipped studs actuated by eccentric cams on the pivots 7; a ratchet mechanism freed when the arms 4 and in the 45° position; or a semi-circular rod rotating within notches in the surface of the leg 5.

A preferred method of effecting locking of the leg 5 on the body portion 3 is, however, that illustrated in Figures 7 to 9. As shown in Figure 7, in this case, the lower end of the body portion 3 is provided with an axial slot 10. A spring steel band 11 is welded round the body 3, this band also being split in register with the slot 10. On the opposite ends of the band 11 adjacent the split therein are attached two studs 12 each of semi-circular cross-section, which together form a pivot 7. As shown in Figure 8, the inner end of a step arm 4 is provided with a hole 13 which fits over the split pivot 7, the hole 13 being eccentrically shaped so that when the bar is in the closed position where it lies parallel to the axis of the body portion 3, or in the fully open position where it is normal to this axis, the two halves 12 of the pivot 7 are pressed together to cause the steel band to contract and clamp the split end portion of the body 3 to the leg 5. In passing from the closed to the open position, or *vice versa*, the arm 4 passes through a position where it makes an angle of about 45° with the axis of the body 3 and in this position, as shown in Figure 9, the shape of the hole 13 is such that the halves 12 can spring apart under the action of the band 11 to free the leg 5.

Finally, the body portion 3 is provided above the step member with an oval metal ring 8 to which is welded a hook 8h. The internal diameter of the narrowest part of the oval ring is such that it will

slide freely on the body portion 3 when its plane is substantially at right-angles to the axis of the body portion, but will jam on the body portion and no longer slide when the plane of the ring makes an acute angle with the axis of the body portion 3, for example when the hook is raised by placing it over a wire in the fence and forcing it downwards, as will be explained below.

It the alternative method of locking the leg 5 to the body 3 illustrated in Figures 10 to 12, as shown in Figure 10, a rectangular aperture indicated at 14 is but in the tube 3, at the respective edges of which are welded two lugs 15 which are drilled at 16 to receive a strong steel pin 17. Between these lugs is inserted a shaped pressure plate 18. Acting on this plate is a rectangular bar 19 welded at one end to the step 4 and having a hole 22 at its other end through which passes the pin 17. A similar arrangement is provided for the other step 4 on the opposite side of the body

3. As shown in Figure 11, the pressure plate 18 which is shaped to pass through the aperture 14 has side portions 20 shaped to correspond to the lugs 15, each side portion having an elongated hole 21 therein, in register with the holes 16 and through which the pin 17 passes.

As shown in Figure 12, the lower end of the bar 19 is shaped to provide two prominences at 23 and 25 with a flat portion between them.

In operation, when the step arm 4 is in the vertical closed position, as shown in Figure 10, the prominence 23 will exert pressure on the plate 18 which in turn can move by reason of the elongated holes 21 to bring pressure to bear on the leg 5 through the aperture 4 and thus to clamp the leg 5 to the body 3. Similarly, when the step arm 4 is in the fully open position at right-angles to the axis of the body 3, the prominence 25 will similarly cause the pressure plate to exert a clamping force on the leg 5. When the step arm 4 is in the 45° position, however, the flat area 24 will release pressure on the plate 18, so that in this position, the leg 5 is free to slide within the body 3.

Various ways in which the device illustrated can be operated will now be described.

(1) When the device is to be used as a walking-stick, the leg 5 is secured at a suitable height within the body portion 3 by means of the tightening stud 9 (or by one of the alternative methods using the pivot 7 or pressure plate 18 described above). The guard 1 acts as the handle of the stick.

(2) When it is to be used as a "portable stile" for crossing a barbed wire fence, the guard 1 is first placed over the top strand of the fence, the leg 5 is freed by loosening the stud 9 (or by putting the arms 4 into the 45° unlocked position in the alternative method described above) and the foot 6 is forced into the ground by the user exerting pressure with his foot on the flange 6w, sufficient pressure being maintained on the guard 1 meanwhile to depress the top wire of the fence. The leg 5 is now locked by means of the stud 9, or by means of the pivot 7 or the pressure plate 18 as the case may be, and the device is ready for use. The user steps onto the nearest arm

other foot on the further step and thus gets across the fence as if he were using a stile.

(3) When the device is to be used for widening and maintaining a gap between two relatively loose adjacent strands of a fence, the nick or indentation 1x in the guard 1 is placed under the uppermost wire, the leg 5 is unlocked and the guard 1 is forced upwards until the wire is taut, the foot 6 is pressed into the ground as before and the leg 5 is then re-locked. The hook 8h of the ring 8 is then placed over the lower of the strands of wire and is forced downwardly by hand until the pressure of the wire causes the angle of the plane of the loop 8 with the axis of the body 3 to become acute, thus jamming it on the body and preventing its sliding. The user can then climb through the gap so provided.

(4) When the device is to be used as a shooting-stick, the leg 5 is merely positioned and locked at the height required for the guard to be used as a seat.

#### CLAIMS

1. A combined walking-stick and fence-crossing device comprising an elongate body portion; a hollow cross-piece mounted at one end of said body portion and having an axial slot extending the full length of the cross-piece and opening adjacent to the body portion; a step member mounted at a position on said body portion intermediate the ends thereof and comprising a pair of arms movable between a position in which they lie parallel to the axis of the body portion and a position in which they are locked so as to extend from the body portion on either side thereof in a direction substantially normal to the axial direction of said cross-piece.

2. A device as claimed in Claim 1, wherein means are provided for varying the distance between said cross-piece and said step member in the axial direction of said body portion.

3. A device as claimed in Claim 2, wherein said cross-piece is formed at the cross-arm of a T-shaped member, the stem of which is tubular and is adapted to slide over the end of said body portion, means being provided to clamp said stem to said body portion at one of a plurality of positions.

4. A device as claimed in Claim 3, wherein said clamping means comprises a plurality of holes at spaced intervals along said stem, each of which can be brought into register with a hole in said body portion, and a peg adapted to be removably inserted into two holes so brought into register.

5. A device as claimed in any one of the preceding Claims, wherein the total length of said device is adjustable.

6. A device as claimed in Claim 5, wherein the end of said body portion remote from said cross-piece is provided with an extension in the form of a rod or tube which is slidable over or within said body portion, and means for clamping said extension to said body portion at any desired axial position.

7. A device as claimed in Claim 6, wherein the end of said extension remote from said cross-piece is provided with a spike having an outwardly-extending flange at its junction with said extension.

A device as claimed in Claim 6 or Claim 7,

wherein said body portion and said extension are of cylindrical cross-section.

9. A device as claimed in any one of the preceding Claims, wherein means are provided for use in  
5 conjunction with said cross-piece to hold apart two relatively loose adjacent strands of a barbed wire fence.

10. A device as claimed in Claim 9, wherein said holding means comprises an oval metal ring surrounding said body portion and having a hook fixed  
10 to one end thereof, the internal diameter of the narrowest part of said ring being such that it will slide freely over said body portion when the plane of the ring is normal to the axis of the body portion, but  
15 will jam on the body portion when the hook is pulled upwards by the pressure of a wire strand.

11. A device as Claimed in any one of the preceding Claims, wherein the outer surface of said cross-piece is shaped to serve as a seat.

20 12. A device as claimed in any one of the preceding Claims made of an aluminium alloy.

13. A device as claimed in Claim 6 or any one of Claims 7 to 12 as dependent thereon, wherein the means for clamping said extension to said body  
25 portion is provided by at least one of said arms of the step member, said means being such that said extension is clamped to said body portion when said arms are in the unextended or the fully extended position, but is free to move axially on said body  
30 portion when said arms are in a position midway between their two extreme positions.

14. A device as claimed in Claim 13, wherein the or each said arm is arranged to rotate about a pivot mounted on said body portion, said pivot being in  
35 the form of a diametrically split stud, a respective half of which is mounted on either side of an axial slot in the end of said body portion in which said extension is arranged to slide and the or each said arm having a non-circular hole therein through  
40 which said stud passes, the hole being so shaped that at each extreme position the two halves of each stud are compressed together to close said slot and thereby to clamp said body portion on said extension, but that at said intermediate position, the  
45 pressure on the two halves of said stud is relaxed to enable relative movement between said body portion and said extension to take place.

15. A device as claimed in Claim 13, wherein the or each said arm is provided with a cam portion  
50 arranged to cause a pressure plate mounted on said body portion adjacent the end in which said extension slides, to pass through an aperture in said body portion to exert clamping pressure on said extension when said arm is in either of its extreme positions,  
55 but to retract said pressure plate when said arm is in the intermediate position.

16. A combined walking-stick and fence-crossing device substantially as hereinbefore described with reference to and as shown in Figures 1 to 6, or as  
60 modified by Figures 7 to 9, or Figures 10 to 12, of the drawings.